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POSTAL RATE AND FEE CHANGES, 2006)

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BEFORE THE
POSTAL REGULATORY COMMISSION
WASHINGTON, DC 20268-0001

Postal Rate and Fee Changes, 2006 — Docket No. R2006-1

DESIGNATIONS FROM OTHER DOCKETS

Original Docket	Party	Designated Material
	United States Postal Service	
	Linda A. Kingsley (USPS-T-10)	
R2000-1	Association for Postal Commerce	Testimony USPS-T-10, (p. 10, line 1 through p. 23, line 8)
R2000-1	Mailing & Fulfillment Service Association	Testimony USPS-T-10, (p. 10; line 1 through p. 23, line 8)
	Linda A. Kingsley (USPS-T-39)	
R2001-1	Association for Postal Commerce	Testimony USPS-T-39, (p. 13, line 28 through p. 26, line 16)
R2001-1	Mailing & Fulfillment Service Association	Testimony USPS-T-39, (p. 13, line 28 through p. 26, line 16)

Respectfully submitted,

Steven W. Williams
Secretary

DESIGNATED MATERIALS FROM OTHER DOCKETS

Original Docket	Designated Materia	Designating Parties
United States Postal Service		
Linda A. Kingsley (USPS-T-10)		
R2000-1	Testimony USPS-T-10, (p. 10, line 1 through p. 23, line 8)	MFSA, PostCom
Linda A. Kingsley (USPS-T-39)		
R2001-1	Testimony USPS-T-39, (p. 13, line 28 through p. 26, line 16)	MFSA, PostCom

[R2000-1]

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BEFORE THE

POSTAL RATE COMMISSION

WASHINGTON, D.C. 20268-0001

POSTAL RATE AND FEE CHANGES, 2000

Docket No. R2000–1

DIRECT TESTIMONY

OF

LINDA A. KINGSLEY

ON BEHALF OF THE

UNITED STATES POSTAL SERVICE

B. Flat Mail Processing

This portion of my testimony is devoted to piece distribution operations where individual flats are processed. The processing of packages of flats in opening unit operations is covered later in my testimony, under parcels and bundles.

1. Preparation

Depending on the class of mail, flats destined for piece distribution operations can originate from several different operations. First-Class metered or permit flats that are prepared in flat tubs by mailers generally can be sent from the platform or BMEU directly to flats sorting operations. Flats obtained through collection mail and that subsequently go through the 010 operation are faced, canceled (if necessary), and trayed before they are sent to flats sorting operations. Flats that originate from opening unit operations must also be "prepped" before they can be inducted in mechanized piece distribution operations. Depending on where the prepping is performed, prepping consists of unloading containers, separating the mail for subsequent operations, removing the packaging material, orienting, and stacking the flats in postal containers or on ledges of the flat sorter machine. All of the prepping operations are performed manually and are labor intensive.

Most of the flats, with the exception of those in mailer-prepared carrier route presort packages, receive some level of processing on flats sorting equipment.

2. Equipment

There currently are two different types of equipment used in the Postal Service to process flats, and there are plans to begin deployment of a third type early next calendar year. The three types of machines are listed below.

- Multi-Position Flats Sorting Machine (FSM 881) —This machine is currently the primary piece of equipment used for processing flats. There are 812 machines deployed, and each machine has four induction stations and 100 bins. This past year, all of the FSM 881s were retrofitted with OCRs that can read the addresses on flats. All of the FSM 881s were already equipped with barcode readers (BCRs), so the new OCR modification allows us to sort the vast majority of flats

across the FSM 881 without the use of employee keying. The FSM 881 sorts the piece based on the address read by the OCR, but does not spray a barcode on the piece. The throughput of the FSM 881 is approximately 6,500 pieces per hour for BCR/OCR operations, and the maximum staffing requirement is six employees. There are no plans to purchase additional FSM 881s.

- Multi-Position Flats Sorting Machine (FSM 1000) —This machine is intended to process a vast majority of the 25 – 33 percent of non-carrier route flats that are non-machinable on the FSM 881. Prior to the deployment of the FSM 1000, the non-machinable flats had to be processed in manual operations. There are 340 machines deployed, and each FSM 1000 has four induction stations and 101 bins. This past year, all of the FSM 1000s were retrofitted with a BCR and can now sort flats using mailer-applied barcodes. It is probable that an OCR modification will be added to the FSM 1000 in the future, but deployment currently is not scheduled before FY 2002 at the earliest. The throughput of the FSM 1000 is approximately 5,000 pieces per hour in BCR operations and the maximum staffing requirement is six employees. There are no current plans to purchase additional FSM 1000s.
- Automated Flats Sorting Machine 100 (AFSM 100) — This machine represents a first step into the future processing environment that is envisioned for flats. A first phase deployment of 175 machines is scheduled to begin in St. Paul, MN in March 2000. The processing and technological capabilities of this machine are vastly superior to those of the FSM 881 and FSM 1000. The machine has three automatic feeders and can sort to 120 bins, with the possibility of future expansion to more bins. It has both BCR and OCR capability, as well as on-line video coding for the OCR rejects. While it is envisioned that the AFSM 100 will ultimately replace the FSM 881s, the first phase of deployment is primarily intended to supplement our existing flat sorter equipment by providing needed flats sorting capacity. A second phase of approximately 400 additional AFSM 100s is also planned to start at the end of FY 2001, and is intended to facilitate the transition to the future flats processing environment that is discussed later in my testimony. The throughput of the AFSM 100 is approximately 17,000 pieces

per hour, and the staffing is 6-9 employees (including video encoding keyers) depending on the readability of the mail.

Unlike letter sorting equipment, all three FSMs sort mail directly into flats trays, or tubs.

3. *Processing / Mailflow*

As I noted earlier, the FSM 881 is the primary piece of equipment used for processing flats in today's environment. Since most of the flats that require piece distribution are machinable on the FSM 881, field sites typically flow flats to that machine first. In the BCR/OCR mode, the reader scans the mail piece in search of a barcode. If a POSTNET barcode is found, the piece is sorted based on the information read by the BCR. If a POSTNET barcode is not found, the OCR scans for the delivery address and the piece is subsequently sorted based on the information returned by the OCR. Flats that contain extraneous information or addresses that cannot be read by the OCR must be keyed or worked manually.

Flats that are non-machinable on the FSM 881 are diverted to the FSM 1000. In some cases, the FSM 1000 is also utilized as an "extra FSM 881" to process machinable flats because of a lack of FSM 881 capacity. Because the FSM 1000 is able to process a wider variety of flats, flats processed on the FSM 1000 do not flow to an FSM 881 for subsequent operations. The FSM 1000 has helped reduce the volume of mail that is processed in manual operations.

As noted in the equipment section, the staffing requirements for both the FSM 881 and FSM 1000 are identical. At full capacity, each machine requires six employees - four for induction and two for sweeping bins, clearing jams, and/or loading ledges. Each machine also has the flexibility to operate with less than six employees in light volume periods. However, the setup and pull down times per machine remain fairly constant between tours and operational runs, no matter whether the number of pieces processed is 5,000 or 50,000.

The deployment of the AFSM 100 will significantly impact our current mail flows. Although the machinability specifications have not been finalized, they are expected to be comparable to the FSM 881. Accordingly, as the AFSM 100s are

deployed to field sites, they will become the primary choice for the processing of machinable flats, and local sites will adjust mail flows appropriately.

Plants that initially receive the AFSM 100s will try to process as many flats as possible through that machine and will use the FSM 881s secondarily. Plants that do not initially receive an AFSM 100 will continue to use the FSM 881 as their primary machine for processing flats. Ultimately, the volume of mail that will continue to be processed on FSM 881s will vary, depending on local site mix of 881s, 100s, and 1000s. As the number of AFSM 100s increases in the field, so too will the AFSM 100's percentage share of the overall flats processed. FSM 881s will be relocated to smaller sites that do not have flats sorting equipment or lack sufficient flats sorting capacity today.

The shift of more incoming secondary distribution from manual to automated operations is one of the biggest changes that will result from the deployment of the AFSM 100s. The throughput of the AFSM 100 is approximately 2 to 3 times higher than that of the FSM 881. As a result, facilities will have a greater opportunity to do incoming secondary processing for more zones and much of the distribution that is being performed manually in delivery units will be automated in plants. With that in mind, the Postal Service is attempting to smoothly begin the second phase of AFSM 100 deployment right after phase one deployment is complete in order to automate incoming secondary processing for more zones.

While all specifics have yet to be finalized, it is anticipated that with the AFSM deployments, the zones that will receive incoming secondary processing on the FSMs will generally be the zones with 10 or more carrier routes.

4. Manual

Flats that remain in manual operations at the plant today (other than for incoming secondary processing) are pieces that do not meet the processing specifications for the FSM 1000 or are rejects from that machine. Examples of these types of flats include rolls, lightweight pieces, or pieces that are not uniform in thickness. There are also heavy volume periods where our existing shortfall in flats sorting capacity results in some flats, that could otherwise be processed on the FSM

881 or FSM 1000, being processed in manual operations. Typically, this occurs when flats sorting equipment is at full capacity and the mail must be processed manually in order to ensure that service standards are met.

Decentralization of manual flat incoming secondary operations from the plant to the delivery units has occurred due to FSM capacity, service, scheme training, and/or space considerations. Very few delivery units have an FSM, so the vast majority of the incoming secondary processing at the delivery units is manual.

While there will undoubtedly always be some mail in manual operations such as the types listed earlier, the AFSM 100 will help reduce the overall amount of mail in manual operations by providing needed additional FSM capacity.

5. Automation/Mechanization Update

The percentage of non-carrier route presort flats barcoded by mailers has continued to grow. At the end of FY 96, approximately 43 percent of all non-carrier route flats were barcoded. The number of barcoded flats increased substantially in FY 1997, with approximately 60.4 percent of all non-carrier route presort flats bearing a barcode. The rate of growth slowed subsequently, and the percentage of non-carrier route flats bearing a barcode ended FY 1998 and FY 1999 at 65.7 percent and 66.8 percent, respectively. With over two-thirds of flat mail barcoded and deployments of the OCR modification to the FSM 881 and the BCR modification to the FSM 1000, there has been a reduction in the number of flats keyed on flat sorters. The equipment modifications have also helped to improve the utilization of barcodes in incoming secondary operations compared to prior years' numbers. However, the utilization in incoming secondary operations remains relatively low when compared to letters, and it highlights the need for additional flats sorting machine capacity. In AP 13, FY 99, Processing and Distribution plants processed 48 percent of their total incoming secondary flat volume using the BCR/OCR on flat sorters, a 13 point increase over the same period last year (SPLY). Keying operations on the flat sorter accounted for an additional 12 percent of their total incoming secondary flat volume. The net result was that 60 percent of the total

incoming secondary volume in plants was processed on flat sorters.[7] A contributor to the increase of volume on FSMs has been an increased focus due to the establishment of machine utilization targets earlier this year, in the interest of improving the overall usage of flats sorting machines. Mailer-applied barcodes also have contributed to the increased incoming secondary volume on FSMs.

Although the incoming secondary numbers indicate that there is room for improvement, it is also important to recognize that just because a barcode was not utilized in an incoming secondary operation does not mean it was not utilized at some other point(s) in the network. For example, a barcode may have been utilized at the incoming primary level, but was not utilized at the incoming secondary level because the incoming secondary distribution for that specific ZIP Code is performed at the delivery unit. The majority of incoming secondary distribution of flats is performed manually in delivery units in the current environment largely because of the shortfall in mechanized flats sorting capacity. Another reason for processing incoming secondary flats at the delivery units could be service, depending on the mail arrival time at the plant, FSM operating window, and/or transportation to the delivery unit. Scheme training is also more difficult to maintain at the plant than at the delivery unit, especially with growth in the number of deliveries. Later, I will discuss how the deployment of the AFSM 100s will cause more incoming secondary flat distribution to move from manual to automation.

For the most part, the deployments of the OCR on the FSM 881 and the BCR on the FSM 1000 have resulted in positive improvements for processing operations. However, two significant processing concerns have surfaced as a result of these deployments. The concerns are separate and distinct issues, but both of them are related to the makeup and preparation of the mail.

The first concern is related to the OCR on the FSM 881. Field sites have reported that the OCR may have trouble recognizing the delivery address on a mail piece when a flat contains other information on the same side as the delivery

[7] This is determined at the incoming secondary level by dividing the number of piece handlings in flat sorter operations by the piece handlings in all incoming secondary operations at plants.

address. The OCR has difficulty discerning the intended delivery address and may interpret a portion of the incidental information as the delivery address. Likewise, when a return address is more prominent (e.g., font size, print quality) than the delivery address, the OCR may interpret the return address as the delivery address. The presence of a barcode facilitates identification of the address block, which helps the OCR discern the delivery address if the barcode was not readable for some reason. However, because not all flats bear barcodes, field sites closely monitor the flats that come through FSM 881 operations and use discretion to determine whether to process non-barcoded pieces on the OCR or to key them. The Postal Service has published articles in mailer publications and has worked with mailers locally regarding the proper OCR standards for flats, but it appears more educational efforts or additional standards are needed.

The other concern relates to the deployment of the BCR on the FSM 1000 and the extension of the barcode discount to FSM 1000 sized pieces. Since the implementation of Docket No. R97-1 rates, field sites have noticed a proliferation of parcels being prepared as FSM 1000 flats. Because the FSM 1000 can process flats up to a maximum thickness of 1¼ inches, the Postal Service has expanded the definition of what may qualify as an automated flat. While this expanded definition may reflect the physical capabilities of the FSM 1000, it is not congruent with the manner in which field sites are actually using the machine. These pieces are often still considered parcels and are not mixed with flats during processing. Similarly, the expanded definition of an automated flat is in conflict with the standard processing category dimensions for a flat.

Generally, processing operations work in accordance with the processing category dimensions contained in the DMM. The dimensions in section C050 set the maximum thickness for a flat at ¾ inches. As a result of the residual shape surcharge implemented after Docket No. R97-1, mailers have started using the expanded thickness definition of an automated flat as an opportunity to avoid the surcharge and are preparing their parcels as packages of flats. The irony of this situation is that the pieces are paying less postage but are usually incurring more handling. Prior to the implementation of the residual shape surcharge, many, if not

all, of these pieces were prepared as machinable parcels. As machinable parcels, these pieces were processed through the BMCs on parcel sorters and sorted to 5-digit. Although these parcels are now prepared as packages of flats, many of them can no longer be processed directly to 5-digit on the BMCs' parcel sorters. In some cases, the strapping material is being removed in order to process the individual pieces as parcels on the parcel sorters. However, in most cases the bundles are sorted manually or on Small Parcel Bundle Sorters at the BMCs to 3-digit or SCF separations. Consequently, this has become new workload for the plants since much of this mail would have bypassed plant operations when the BMCs sorted it to 5-digit. To compound the matter, plants generally do not sort parcels on the FSM 1000, and therefore must sort these pieces manually to the 5-digit level. The reasons that these parcels are not sorted on the FSM 1000 vary, but the primary ones are the incompatibility with the flats mail stream and the impact on downstream delivery operations. It is difficult to sort and handle the smaller, thicker parcels with larger, thinner flats. Although these pieces may be prepared as packages of flats, employees in both processing and delivery offices, for the most part, continue to treat and handle them as parcels.

6. Description of Future System

The AFSM 100 is the first step into the flats processing environment beyond the test year. Ultimately, the Postal Service plans to pursue sorting flats to DPS. Currently, the value of DPS flats to operations is being reviewed and explored. While there are details yet to be resolved, it is envisioned that the Postal Service may DPS flats with different types of equipment. The AFSM 100, or a machine similar to it, will be used to process and sequence flats that are not carrier route sorted by mailers. Flats that are not machinable on the AFSM, or similar machine, are not likely to be included in the DPS process. Another piece of equipment necessary to place flats into DPS may be a bundle collator. If this piece of equipment proves economically justifiable, it will be used to collate, or merge, the DPS flat bundle from the AFSM with multiple packages of flats that have been sorted to carrier route in walk sequence by mailers. There will likely be two

significant changes for mailers as the Postal Service moves toward a DPS environment for flats. First, all flats that claim the barcode discount will likely be required to bear an 11-digit barcode, similar to letters. Second, the flats within all carrier route sorted packages will be required to be prepared in walk sequence. Emphasis will also be on the AFSM and collator machinability characteristics to maximize the candidate flat volume for DPS. The Postal Service intends to work on these issues with the mailing industry to provide ample time for mailers to make these needed changes in the near future. This highlights the long-term value of machinability (AFSM compatibility), barcoding (required for DPS), and walk sequence carrier route presorting for flats.

It is anticipated that some portion of FSM 881s will be redeployed, most likely to smaller sites, when the second phase of AFSM deployment commences.

C. Parcels, Bundles, and Sacks

In this part of my testimony, I will provide an overview of our operations as they relate to the processing of parcels, bundles, and sacks today, and in the test year.

1. Parcel Processing

a. Equipment

For the most part, machinable parcels are processed in the Bulk Mail Centers (BMCs) with the same basic equipment that has been used for 25 years. The bulk mail network consists of 21 BMCs and eight Auxiliary Service Facilities (ASFs). The Primary and Secondary Parcel Sorters are fed by mechanized conveyors which feed parcels onto slides. Parcels are then manually separated and inducted into a tilt tray sorter. Parcel barcodes have continued to assist with the sortation of machinable parcels and have reduced manual keying requirements. Before entering a BMC, parcel barcodes are either provided by mailers or at the retail counter. If a barcode does not exist, the parcel sorter clerk must key the ZIP Code information, and a 5-digit barcode label is applied to the parcel.

Non-machinable outside parcels (NMOs) are either sorted manually, or with the use of mechanized sorting equipment at several BMCs depending on the non-machinability characteristics of the parcel. This equipment ranges from basic rolling conveyors to more elaborate keying and sorting machines.

b. Mailflow

Non-presort or non-dropshipped parcels entered into the mailstream are transported to the origin BMC either directly from retail/delivery units or through the plant. The origin BMC sorts the machinable parcels on the primary parcel sorter to the destination BMC or, if the parcel destinates within the same BMC service area, to the secondary parcel sorter. The secondary parcel sorter will sort the parcels to the appropriate 5-digit separation. The 5-digit containers of machinable parcels are transported to the delivery units either directly from the BMCs or transferred through a mail processing plant.

NMO parcels are processed to the 3-digit level in the BMCs. Mail processing plants process these NMOs received from the BMCs to the 5-digit level. This operation is, for the most part, performed manually and requires regular set-up (gathering of rolling stock and placarding containers) and breakdown, regardless of the volume processed.

Parcels presorted and dropshipped at the BMCs are processed in the same manner as discussed above. Parcels presorted to 5-digits and dropshipped at an SCF are crossed docked to the delivery unit.

The plants also process incoming and outgoing Priority Mail parcels in areas without Priority Mail Processing Centers. Priority Mail parcels may be sorted on SPBSs or manually depending on machinability and/or the processing location.

For the most part, parcels are sorted to carrier route at the delivery unit.

2. Bundle Processing

Flat mail bundles that arrive at a mail processing plant in sacks, on pallets, or in flat tubs, are often sorted before they are dispatched or opened for piece distribution. When pallets and sacks contain bundles made up to finer sortation

levels than the container, a bundle sort is required. This is accomplished in a manual or mechanized operation. Bundles that will subsequently be opened for piece distribution generally are sorted into rolling containers. Bundles that are dispatched can also be sorted into rolling containers.

a. Equipment

- Small Parcel and Bundle Sorter (SPBS) - The Postal Service has increased the amount of SPBS equipment and keying stations over the last several years. The SPBSs are deployed with four, five or six induction stations, and require a staffing of no more than three people per induction station. The SPBS can make up to 100 separations. There are currently 341 machines deployed in the field. The average throughput of the SPBS is between 678 and 945 bundles or small parcels per hour per induction station. The majority of the Processing and Distribution Centers and 19 of the 21 BMCs have SPBSs.
- The SPBS Feed System has been a recent addition to the SPBS. These feed systems consolidate all the induction lines into a centralized network capable of transferring mail from all types of mail containers and transporting the contents on mechanized conveyors to the induction/keying consoles. There are currently 240 deployed in the field with a contract for 50 additional systems. When the SPBS Feed System is incorporated, staffing is reduced by one-half to three people per crew, depending on the number of induction stations.
- Linear Integrated Parcel Sorters (LIPS) - The LIPS machines are not part of a national program and are procured locally. The configuration and performance vary based on the vendor, but the basic design consists of a feed station where the piece or bundle is keyed and sent down a rolling conveyor for deposit into rolling containers or pallet boxes.

b. Mailflow

Bundles are processed in both BMCs and mail processing plants. Mixed-ADC bundles are transported to the origin plant to be opened for piece distribution to the ADC network. Bundles at the BMC and ADC level are primarily sorted to 3-

digit and SCF separations. Plants subsequently sort 3-digit and SCF containers from the BMC and mailers, for either piece distribution or a bundle sort depending on the presort level of the bundle. Other separations may be performed at the plants on bundles for various operational reasons, other than just based on the presort level, (e.g. machinable volumes separated from non-machinable volumes, and barcoded flats separated from non-barcoded flats).

The SPBS is the equipment of choice for these bundle-sorting operations. The remaining sortation of bundles is performed with LIPS equipment or in manual operations. The manual options are either dumping the bundles on a belt and sorting to containers, or sorting the bundles into containers directly from the pallet.

Bundle distribution requires manual labor for operational set-up and breakdown. This involves the collection and placement of containers and placards for set-up. Also, at the time of dispatch, containers are closed and moved to the dock to meet transportation. No matter the volume received during a specific operating window, the setup and breakdown must take place.

3. Sack Processing

Sacks arrive at plants and BMCs from customers and other plants. The sacks may be containerized or bedloaded in vehicles. Containers are unloaded with either pallet handling equipment or, if wheeled, with manual labor. Containerized loads are much more efficient for unloading than bedloads. Bedloaded sacks are unloaded manually and, in some cases, the unloading is accomplished with the assistance of mechanized conveyors. Bedloads are labor intensive and time consuming to unload.

a. Equipment and Mailflow

Sacks are sorted in the BMCs on the Sack Sorting Machine (SSM) to the BMC network and, for the intra-BMC volume, to the 3-digit or SCF level. Keying or automated reading of the barcoded label occurs at the induction station, while the employee places the sack into a bucket that inducts it onto the tilt tray system. The intra-BMC sacks are transported to the plants for opening or further sortation in the

case of some 5-digit sacks. Sacks, in most cases, are opened and dumped manually. Mechanized sack dumping equipment assists with emptying sacks of parcels into the parcel sorter system in the BMCs. Sack sortation in the plants and other BMC operations is performed in some cases with mechanized sack sorters, but mostly with manual labor. Sacks are opened in the plants and delivery units with manual labor. Working sacks of parcels (sorted to BMC or MXD BMC) are opened at the BMC for processing on the Parcel Sorting Machines.

4. Description of Future System

The Postal Service continues to explore enhancements to the parcel and sack sorting equipment in the BMCs with the goal of reducing labor and improving equipment reliability. On the parcel sorters, the new technology will eliminate, to a large degree, manual labor currently used for facing and keying. Singulation and tunnel-scanning technology are being tested in the BMCs with the expectation of deployment in FY 2001. The singulation equipment will spread the parcels and allow induction into the tunnel scanner one parcel at a time. The 360-degree tunnel scanner will have the ability to read the barcode independent of the orientation of the piece. This technology will reduce the manual labor associated with mechanized parcel sortation in the BMCs. For the non-machinable outside volume, additional mechanized sorters are being investigated, to improve the productivity of these predominantly manual operations.

There are continuing efforts to develop and deploy robotic systems for the processing of letter trays, placing particular emphasis on the bulk mail network. Standard Mail (A) letter trays are currently sorted at the BMCs into 3-digit or SCF separations, using either the Sack Sorting Machines, an NMO sorter, or manual labor. MXD ADC trays are sent to the closest plant consolidation center for piece distribution. The robotic systems will be designed specifically for letter trays, increasing productivity and reducing damage.

In the plants, the processing of sacks has, with the exception of a limited number of sack sorters, been performed exclusively with manual labor. The Small Parcel and Bundle Sorters and, more recently, the Linear Integrated Parcel Sorters,

were the first pieces of equipment in the plants to reduce the labor requirements for bundles and parcels. Now, the focus is on advancing the technology in this area with the next generation of sorters, with barcode readers, OCRs, and video coding stations to further reduce labor hours. Universal Transport Systems are also in development, which are designed to sort and transport trays, flat tubs, sacks, parcels and bundles. Robotic systems are also being developed to assist with the loading and unloading of parcels, bundles, pallets, and sacks into and out of containers.

[R2001-1]

Postal Rate Commission
Submitted 9/24/01 1:10 pm

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BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON DC 20268-1001

POSTAL RATE AND FEE CHANGES, 2001: **Docket No. R2001-1**

DIRECT TESTIMONY
OF
LINDA A. KINGSLEY
ON BEHALF OF THE
UNITED STATES POSTAL SERVICE

B. Flat Mail Processing

This portion of my testimony is devoted to piece distribution operations where individual flats are processed. The processing of packages of flats in opening unit operations is covered later in my testimony, under parcels and bundles.

1. Preparation

Depending on the class of mail, flats destined for piece distribution operations can originate from several different operations. First-Class metered or permit flats that are prepared in flat tubs by mailers generally can be sent from the platform or BMEU directly to flats sorting operations. Flats obtained through collection mail that subsequently go through the 010 operation are faced, canceled (if necessary), and trayed before they are sent to flats sorting operations. Flats that originate from opening unit[15] operations must also be "prepped" before they can be inducted into piece distribution operations. Depending on where the prepping is performed, prepping can consist of unloading containers, separating bundles for subsequent operations, removing the packaging material, orienting, and stacking the flats in postal containers or on ledges of distribution equipment. All of the prepping operations are performed manually and are labor-intensive.

Barcoded and non-barcoded flats are "prepped" in a single operation and are directed to piece distribution operations based on physical characteristics (see Equipment section below), mail class, and presort level. All flats sorting equipment, by the end of FY 2002, will be able to process both barcoded and non-barcoded pieces together in the same operation. Most of the non-carrier route presort flats receive some level of processing on flats sorting equipment.

2. Equipment

There currently are three different types of equipment used in the Postal Service to process flats:

- Multi-Position Flats Sorting Machine 881 (FSM 881) - As of August 2001, 412 machines were still in plants. Each machine has four manual induction stations and 100 bins. All of the FSM 881s are equipped with OCR/BCRs that can read addresses and barcodes on flats. There is no on-line video coding for OCR rejects. For non-barcoded flats, the FSM 881 sorts the piece based on the address read by the OCR, but does not spray a barcode on the piece. The throughput of the FSM 881 is approximately 6,500 pieces per hour for BCR/OCR

[15] An opening unit is the operational area within a processing facility where sacks and containers of mail are opened and prepared for distribution.

operations, and the maximum staffing requirement is six employees. By FY 2003, the number of FSM 881s in operation is expected to be reduced to approximately 110. They will primarily be relocated to smaller facilities.

- Multi-Position Flats Sorting Machine 1000 (FSM 1000) - This machine is intended to process the vast majority of flats that are nonmachinable on the FSM 881. Prior to the deployment of the FSM 1000, non-machinable flats had to be processed in manual operations. There are 351 machines deployed, and each FSM 1000 currently has four induction stations and 101 bins. All of the FSM 1000s are equipped with a BCR and can sort flats using mailer-applied barcodes. An OCR modification, currently scheduled for deployment in FY 2002, will be added to the FSM 1000. Part of the OCR deployment includes the addition of an automated flats feeder (AFF) to one of the existing keying consoles. Three keying consoles will remain on the machine. Similar to the FSM 881, there is no on-line video coding for OCR rejects nor does it spray a barcode on the piece. Currently, throughput is approximately 5,000 pieces per hour in BCR operations and is expected to increase to 7,000 with the new AFF/OCR modification. The maximum staffing is currently six employees and is expected to be reduced to five with the AFF/OCR enhancement. Presently there are no plans to purchase additional FSM 1000s.
- Automated Flats Sorting Machine 100 (AFSM 100) - This machine represents the first step into the future processing environment envisioned for flats. Phase I deployment of 175 machines is complete. Phase II deployment of 362 machines began in December 2000 and is scheduled for completion in April 2002. The processing and technological capabilities of this machine are vastly superior to those of the FSMs 881 and 1000. The machine has three automatic feeders and can sort to 120 bins, with the possibility of future expansion to more bins. It has both BCR and OCR capability, as well as on-line video coding[16] for the OCR rejects. Similar to the other FSMs, the AFSM does not spray a barcode on the piece. AFSM 100s are currently undergoing a performance modification to

[16] Keyers resolve addresses unreadable by the OCR by an on-line video coding process.

increase the machine's throughput as a result of a new software release and minor hardware changes. Deployment began in July 2001, and is expected to be completed by April 2002. The AFSM 100 has for the most part replaced the FSM 881 at a ratio of 1 to 2.5. Throughput of the AFSM 100 is approximately 17,000 pieces per hour and the staffing is five employees on the machine and up to three video encoding keyers depending on mail readability.

Unlike letter sorting equipment, all FSMs sort mail directly into flat trays.[17]

3. Processing / Mailflow

Since the majority of flats that require piece distribution are machinable on the AFSM 100, field sites flow flats to that machine first. The BCR/OCR reader scans the mailpiece in search of a barcode/address block. If a POSTNET barcode is found, the piece is sorted based on the information read by the BCR. If a POSTNET barcode is not found or cannot be read, the OCR looks for the delivery address and the piece is subsequently sorted based on the information returned by the OCR. Flats that contain extraneous information, thereby interfering with OCR address recognition, or addresses that cannot be read by the OCR, have their images keyed on-line or sent to manual operations.

Flats that are nonmachinable on the AFSM 100 are diverted to the FSM 1000. Because the FSM 1000 is able to process a wider variety of flats, flats processed on the FSM 1000 do not flow to an AFSM 100 or an FSM 881 for subsequent operations. The FSM 1000 has reduced the volume processed in manual operations.

Each FSM also has the flexibility to operate with less than a full crew in light volume periods. However, the setup and pull down times per machine remain fairly constant between tours and operational runs, whether the number of pieces processed is 5,000 or 50,000.[18]

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[17] By contrast, letter-sorting equipment sorts into bins that need not be set up for each change in sort scheme. This is among the factors that alter the effect of changes in operating volumes on operation workhours.

[18] As explained in Chapter 3, this is a key reason why workhours fluctuate less than volume in sorting operations, including the FSM.

Deployment of the AFSM 100 has significantly impacted our mail flows. Although the machinability specifications have not been finalized, they should be comparable to the FSM 881. Full AFSM 100 deployment will result in the capacity necessary to allow the FSM 1000 to process only the truly non-machinable mail.

One of the biggest changes that has resulted from the deployment of the AFSM 100 is an increase of incoming secondary distribution sort (to carrier) from manual to automated FSM operations. Throughput of the AFSM 100 is approximately 2 to 3 times higher than that of the FSM 881. As a result, facilities have a greater opportunity to do incoming secondary processing for more zones. Much of the distribution that has been performed manually in delivery units is being automated in plants. It is anticipated that with the AFSM 100 deployments, the zones that will receive incoming secondary processing on the FSMs will generally be the zones with 10 or more carrier routes.

4. Manual

Flats that remain in manual operations at the plant today (other than for incoming secondary processing) are pieces that do not meet the processing specifications for the FSM 1000 or are rejects from that machine. Examples of these types of flats include rolls, lightweight pieces, or pieces that are not uniform in thickness. There are also heavy volume periods (during the day, week, month or year) where a temporary shortfall in flats sorting capacity results in some flats, that could otherwise be processed on an FSM, being processed in manual operations. Typically, this occurs when flats sorting equipment is at full capacity and the mail must be processed manually in order to ensure that service standards are met. While there will undoubtedly always be some mail in manual operations such as the types listed earlier, the additional FSM capacity provided by continued AFSM 100 deployment will further reduce the overall amount of mail in manual operations.

Very few delivery units have an FSM, so the vast majority of the incoming secondary processing at the delivery units is manual.

5. Automation/Mechanization Update

The percent of non-carrier route presorted flats barcoded by mailers has continued to grow. At the end of FY 96, approximately 43 percent of all non-carrier

route flats were barcoded. Barcoded flats increased substantially in FY 97, with approximately 60.4 percent of all non-carrier route presorted flats bearing a barcode. The percentage of non-carrier route flats bearing a barcode was 69.6 percent in AP 12 FY 01. At the same time, plants processed 29 percent of the *total* incoming secondary volume on FSMs. Of the incoming secondary volume in plants, 73 percent was finalized on automated operations.[19] As stated earlier, continued deployment of the AFSM 100s will cause more incoming secondary flat distribution to move from manual to automation. As of AP 12 FY 01, the percent of total flats workload in plants was 54 percent on the AFSM 100, 17 percent on the FSM 1000, 14 percent on the FSM 881, and 15 percent in manual sortation.

For the most part, deployments of the OCR on the FSM 881 and the BCR on the FSM 1000 have resulted in positive improvements for processing operations. However, two significant processing concerns have surfaced as a result of these deployments as I first mentioned in Docket No. R2000-1. The concerns are separate and distinct issues, but both are related to mail makeup and preparation.

The first concern is related to the OCR on the FSMs. The OCR can have difficulty discerning the intended delivery address and may interpret a portion of the incidental information as the delivery address piece when other information is on the same side as the delivery address. Likewise, when a return address is more prominent (e.g., font size, print quality) than the delivery address, the OCR may interpret the return address as the delivery address. Presence of a barcode facilitates identification of the address block, which helps the OCR discern the delivery address if for some reason the barcode is unreadable. Therefore, even with the OCR on the FSMs, barcodes continue to add value, yet not to the same extent prior to OCR deployments. The Postal Service has published articles in mailer publications and continues to work with mailers through the Mailers Technical Advisory Committee (MTAC) regarding the refinement of flats OCR/BCR addressing standards.

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[19] This is determined at the incoming secondary level by dividing the number of piece handlings in flat sorter operations by the piece handlings in all incoming secondary operations at plants.

The other concern relates to the deployment of the BCR on the FSM 1000 and the extension of the barcode discount to FSM 1000-sized pieces. Since implementation of the Standard residual shape surcharge in Docket No. R97-1, field sites have noticed a proliferation of parcels being prepared as FSM 1000 flats. Because the FSM 1000 can process flats up to a maximum thickness of 1¼ inches, the Postal Service expanded the definition of what may qualify as an automated flat. Generally, processing operations work in accordance with the processing category dimensions contained in the Domestic Mail Manual (DMM). Dimension requirements in section C050 set the maximum thickness for a flat at ¾ inches.

Prior to implementation of the residual shape surcharge, many, if not all, of these pieces were prepared as machinable parcels. As machinable parcels, these pieces were processed through the Bulk Mail Centers on parcel sorters and sorted to 5-digit locations. These parcels are now "disguised" as packages of flats and many of them can no longer be processed directly to 5-digit on BMCs' parcel sorters. To compound the matter, plants generally do not sort parcels on the FSM 1000, and therefore must sort these pieces manually or on the SPBS to the 5-digit level. The irony of this situation is that mailers are paying less postage but their pieces are usually incurring more handling.

The reasons that these parcels are not sorted on the FSM 1000 vary, but the primary ones are the incompatibility with the flats mail stream and the impact on downstream delivery operations. It is difficult to sort and handle the smaller, thicker, more rigid parcels with larger, thinner, more flexible flats. Parcels also lose orientation when sorted into flat trays and can fill a tray with only a few pieces if they fall on end. This necessitates very frequent sweeping and increases flat tray usage.

Although these pieces may be prepared as packages of flats, employees in both processing and delivery offices, for the most part, continue to treat and handle them as parcels. While this expanded definition may reflect the physical capabilities of the FSM 1000, it is not congruent with the manner in which field sites are actually using the machine. Future Postal Service efforts are likely to address this anomaly. This supports limiting the proposed BPM flats barcode discount and the flat and parcel rate distinction (witness Kiefer, USPS-T-33) to AFSM 100 compatible criteria.

6. Description of Future System Beyond the Test Year

Ultimately, the Postal Service plans to pursue sorting flats to DPS, which would begin in FY 2004 at the earliest. Currently, the value of DPS flats is being reviewed and explored. While the specifics are yet to be resolved, it is envisioned that the Postal Service may DPS flats with a different type of equipment than what is used today. The AFSM 100, or a machine similar to it such as a sequencer, would be used to process and sequence flats. This would be a zone-based (5-digit) process similar to the two passes required on DBCS for letters. Of course, flats that are not machinable on the sequencer are unlikely to be included in DPS.

There will likely be two significant changes for mailers as the Postal Service moves toward a DPS environment for flats. First, all flats that claim the barcode discount will be required to bear an 11-digit barcode, similar to letters, in order to sort to delivery point. Second, if the sequencer is the selected method, carrier route presorted packages will not have value for DPS zones and a 5-digit presort will be the finest sort required. Emphasis will also be on the machinability and entry level characteristics to maximize the candidate flat volume for DPS. The Postal Service intends to work on these issues with the mailing industry to provide ample time for mailers to make these needed changes in the future. This highlights the long-term operational value for flats of machinability (currently AFSM compatibility), barcoding (required for DPS), and carrier route presort for non-DPS zones.

C. Parcels, Bundles, Sacks, and Trays

In this part of my testimony, I provide an overview of operations as they relate to the processing of parcels, bundles, sacks, and trays today and in the test year.

1. Parcel Processing

Standard Mail and Package Services parcels are predominantly processed within the bulk mail network consisting of 21 Bulk Mail Centers (BMCs) and eight Auxiliary Service Facilities (ASFs).

a. Equipment

Until recently, machinable parcels have been processed in the BMCs with the same basic equipment for the last 25 years. ASFs are not similarly equipped.

- The Primary and Secondary Parcel Sorter Machines (PSM) are fed by mechanized conveyors which feed parcels onto slides. Parcels are then manually separated and inducted into a tilt tray sorter. Parcel barcodes continue to enhance the sortation of machinable parcels and have reduced manual keying requirements. If a barcode does not exist on the parcel, the ZIP Code information is read by the operator, manually keyed, and a 5-digit barcode label is applied to the parcel for possible subsequent handlings.
- The Singulate, Scan, Induction Unit (SSIU) equipment currently in deployment automates the singulation and induction of barcoded parcels onto the BMC PSM. This device allows parcels to be sent one at a time, through a dimensioning unit, a weigh-in-motion scale, and a scanning tunnel that reads the parcel barcode. Deployment is expected to be completed by May 2002.

Non-machinable outside parcels (NMOs) are either sorted manually or with the use of mechanized sorting equipment at several BMCs depending on the non-machinability characteristics of the parcel. This equipment ranges from basic rolling conveyors to more elaborate keying and sorting machines.

b. Mailflow

Non-presort or non-dropshipped parcels entered into the mailstream are transported to the origin BMC either directly from retail/delivery units or more commonly consolidated through the plant. The origin BMC sorts the machinable parcels on the primary PSM which sorts parcels to the high-volume 5-digit destinations within the BMC service area as well as to each destination BMC. Parcels for the lower-density destinations within the BMC service area are sorted from the primary PSM directly to the secondary PSM, which sorts parcels to 5-digit destinations for a total of approximately 2,000 separations. The 5-digit containers of machinable parcels are transported to the delivery units either directly from the BMCs on occasion or, more commonly, transferred through a plant.

NMO parcels are processed to the 3-digit level in the BMCs for their service area and transferred to the plants. Plants then process the NMOs received from the BMCs to the 5-digit level. If customers were to prepare 3-digit containers of NMOs and dropship the containers to destination plants as proposed by witness Kiefer

(USPS-T-33), these parcels would be processed in NMO operations set up at plants.[20] This operation is performed manually and requires regular set-up (gathering of rolling stock and placarding containers) and breakdown, virtually regardless of the volume processed. [21]

Parcels presorted to BMC level and dropshipped at the destination BMC are processed on PSMs to the 5-digit level. Parcels presorted to 5-digits and drop-shipped at an SCF are cross-docked to delivery units. For the most part, parcels are sorted to carrier route at the delivery unit regardless of class or subclass.

For Package Services parcels, flats bundles, and irregulars, the mailflow for a specific processing category is similar for all of the subclasses (Parcel Post, Bound Printed Matter, Media Mail, and Library Mail). Witness Kiefer's (USPS-T-33) proposed changes to outdated Library Mail and Media Mail requirements will result in similar preparation for these subclasses depending on the processing category and better align with operational processes. For example, current preparation requirements result in BMC-level bundles for flats, letters and irregulars. Piece distribution for BMC-level bundles do not exist at the BMCs and currently this volume has to be sent to a plant to sort to the BMC's service area which is inconsistent with either the existing outgoing or ADC sort plans at the plant.

2. Bundle Processing

Flat mail bundles that arrive at a mail processing plant in sacks, on pallets, or in flat trays, are often sorted before they are dispatched or opened for piece distribution. When pallets and sacks contain bundles made up to finer sortation levels than the container, a bundle sort is required. This is accomplished in a manual or mechanized operation. Bundles are usually sorted into rolling containers.

a. Equipment

- Small Parcel and Bundle Sorter (SPBS) - The SPBS is deployed with four, five, or six induction stations, and requires a staffing of no more than three people per induction station. The SPBS can sort to 100 separations. However, some sites have added either 16 or 32 additional bins to these machines. There are

[20] Machinable parcels would still need to sorted to 5-digits at the BMCs or by mailers and would *not* be allowed to be included as part of the 3-digit NMO sort.

currently 346 machines deployed in the field. The average throughput of the SPBS is between 678 and 945 bundles or small parcels per hour per induction station. The majority of plants and 19 of the 21 BMCs have SPBSs.

- SPBS Feed System - This system is a recent addition to the SPBS. Feed systems consolidate all the induction lines into a centralized network capable of transferring mail from all types of mail containers and transporting the contents on mechanized conveyors to all the induction/keying consoles. There are currently 272 feed systems deployed in the field. With the SPBS Feed System, a staffing reduction equivalent to 0.5 to 3 people per crew can be realized, depending on the number of induction stations.
- Linear Integrated Parcel Sorters (LIPS) - The LIPS machine is not part of a national program and is procured locally. The configuration and performance vary based on the vendor, but the basic design consists of a feed station where mailpieces or bundles are keyed and sent down a rolling conveyor for deposit into rolling containers or pallet boxes.

b. Mailflow

Bundles, or packages of flats, are processed in both BMCs (Standard Mail and Package Services) and mail processing plants (all classes). Mixed-ADC bundles are transported to the origin plant to be opened for piece distribution to the ADC network. BMCs and ADC plants sort bundles primarily to 3-digit and SCF separations. Plants subsequently sort 3-digit and SCF containers for either piece distribution or a bundle sort depending on the presort level of the bundle. Other separations may be performed at the plants on bundles for various operational reasons, other than just based on the presort level. For example, machinable volumes may be separated from non-machinable volumes.

The SPBS is the equipment of choice for these bundle-sorting operations. The remaining sortation of bundles is performed with LIPS equipment or in manual operations. The manual options are either dumping the bundles on a belt and sorting to containers, or sorting the bundles into containers directly from the pallet.

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[21] Another example of fixed costs that cause workhours to vary less than volume.

Mechanized and manual bundle distributions require manual labor for operational set-up and breakdown. This involves the collection and placement of containers and placards for set-up. Also, at the time of dispatch, containers are closed and moved to the dock to meet transportation. No matter the volume received during a specific operating window, set-up and breakdown are fairly fixed.[22]

3. Sack Processing

a. Equipment

- Sack Sorting Machine (SSM) - Sacks are sorted in BMCs on the SSM to the BMC network for origin sacks and, for intra-BMC volume, to the 3-digit or SCF level. Keying or automated reading of the barcoded label occurs at the induction station, while the clerk places the sack into a bucket that inducts it onto the tilt tray system.

b. Mailflow

Sacks arrive at plants and BMCs from customers and other plants and may be containerized or bedloaded in vehicles. Containers are unloaded with either pallet handling equipment or, if wheeled, with manual labor. Containerized loads are much more efficient for unloading than bedloads. Bedloaded sacks are unloaded manually and, in some cases, the unloading is accomplished with the assistance of mechanized conveyors. Bedloads can maximize transportation cube utilization, yet are labor intensive and time consuming to unload.

Intra-BMC sacks are transported to the plants for opening or, in the case of carrier-route and some 5-digit sacks, further sortation to downstream facilities. Sacks, in most cases, are opened and dumped manually. Mechanized sack dumping equipment assists with emptying sacks of parcels into the parcel sorter system in the BMCs. Sack sortation is performed, in some cases, with mechanized sack sorters, but mostly with manual labor. Sacks are opened in the plants and delivery units with manual labor.

[22] This is one reason why workhours fluctuate less than volume in these operations.

4. Tray Processing

a. Equipment

- Robotic Tray Handling (2 types) - (1) Pedestal-style robots are designed to move sleeved and strapped letter trays from conveyors to containers. Currently, 85 pedestal-style robots have been deployed. Primary operations for robotics are the dispatch areas in plants and in-bound distribution operations at Airport Mail Centers. (2) One hundred gantry-style robots, which have the capability to handle flat tubs and strapless and sleeveless letter and flat trays, have also been deployed. They have increased processing capacity and higher throughputs than the pedestal-style robot. The gantry robot is essentially an arm that can move along an overhead track distributing mail into 24 separations. Gantry-style robots are predominantly located in plant dispatch areas.
- Tray Management System (TMS) - TMS uses tray identification, transport, storage, and process control technologies to automate the movement and staging of trayed letter and flat mail between most mail sortation operations. TMS is assembled from a family of common components that can be easily reconfigured. TMS was fully deployed in 28 plants by the end of FY 01. There are no further plans for additional systems at this time.

b. Mailflow

Letter trays are often sorted in the BMCs on the SSMs to the BMC network for origin trays and, for the intra-BMC volume, to the 3-digit or SCF level. Certain BMCs sort all or a portion of the trays on other mechanized equipment that in certain cases is also used to sort NMOs. In the plants, trays are sorted manually, with the assistance of the tray handling equipment described above, or by TMS. Trays sorted at origin are either transported to the Airport Mail Center, sorted to the appropriate containers for dispatch to surface transportation, or flowed to the appropriate piece distribution operation. Destination trays are sorted and flowed to the appropriate piece operation, dispatched to a downstream distribution facility, or dispatched directly to a delivery unit. Mixed ADC/AADC trays are sent to the closest plant consolidation center for piece distribution.

5. Description of Future System Beyond the Test Year

The Postal Service is in the process of evaluating new technologies that have the potential to replace, supplement, or enhance our SPBS equipment. The focus of this effort is to assess technology that can add OCR/BCR capabilities to bundle sortation, improve equipment throughput/productivity, and add separations. Analysis will be performed to determine if completely new pieces of equipment should be procured or if enhancements could be applied to our current inventory of equipment. It is possible that enhancements could take place before the end of the test year, but if the choice is to purchase new equipment, deployment will likely occur after the test year.

The Postal Service continues to explore enhancements to sorting equipment in the BMCs with the goal of reducing labor and improving equipment reliability. We are in the early development stages of enhancing the SSIUs with OCRs and barcode applicators.

Additional applications for robotic equipment will also be explored focusing primarily on dispatch operations.